



FerryBox observations in the Southern North Sea

– Application of numerical models for improving the knowledge about the significance of FerryBox data for the Southern North Sea region -

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In the frame of the EU supported project FerryBox a measuring system is operated onboard a ship of opportunity on the route from Cuxhaven (Germany) to Harwich (United Kingdom) which is covered every night. The FerryBox system has sensors and analysers for the parameters salinity, pH, oxygen, turbidity, fluorescence, ammonium, nitrate/nitrite, o-phosphate and silicate. While running more or less the same track on each transect the spatial and temporal resolution of observations is very high along the route. However, the temporal and spatial information beside the ferry route and the vertical information of the water column is limited. For improving the knowledge about the significance of the FerryBox data from the route for the southern North Sea region numerical models were applied to get deeper insight of:

- the spatial and temporal development of water constituents of the surrounding water masses in comparison with the FerryBox data by using a coupled ecosystem model
- the fate of water parcels measured by the FerryBox system by means of a Lagrangian tracer with a general circulation model

Furthermore the FerryBox measurements were used to validate the ecosystem model results and to improve the parameterisations of processes within the model system and first steps of data assimilation were done.